INSPECT:
Indiana Opioid Patterns & Behaviors

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Presentation Overview

1. Report key findings from a recent study of the social epidemiological patterns of opioid use in Indiana
   - Eric R. Wright, Harold E. Kooreman, Marion S. Greene, R. Andrew Chambers, Aniruddha Banerjee, and Jeffrey Wilson. 2014. "The Iatrogenic Epidemic of Prescription Drug Abuse: County-level Determinants of Opioid Availability and Abuse." *Drug and Alcohol Dependence* 138: 209-215.
2. Share key findings from the ***2013 IPLA INSPECT Knowledge and Use Survey***

The Iatrogenic Epidemic of Prescription Drug Abuse: County-level Determinants of Opioid Availability and Abuse

Eric R. Wright, Harold E. Kooreman, Marion S. Greene, R. Andrew Chambers, Aniruddha Banerjee, and Jeffrey Wilson

Drug and Alcohol Dependence (2014) 138:209-215

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An Epidemic

"…Centers for Disease Control and Prevention has characterized prescription drug overdose as an epidemic, a label that underscores the need for urgent policy, program, and community-led responses."

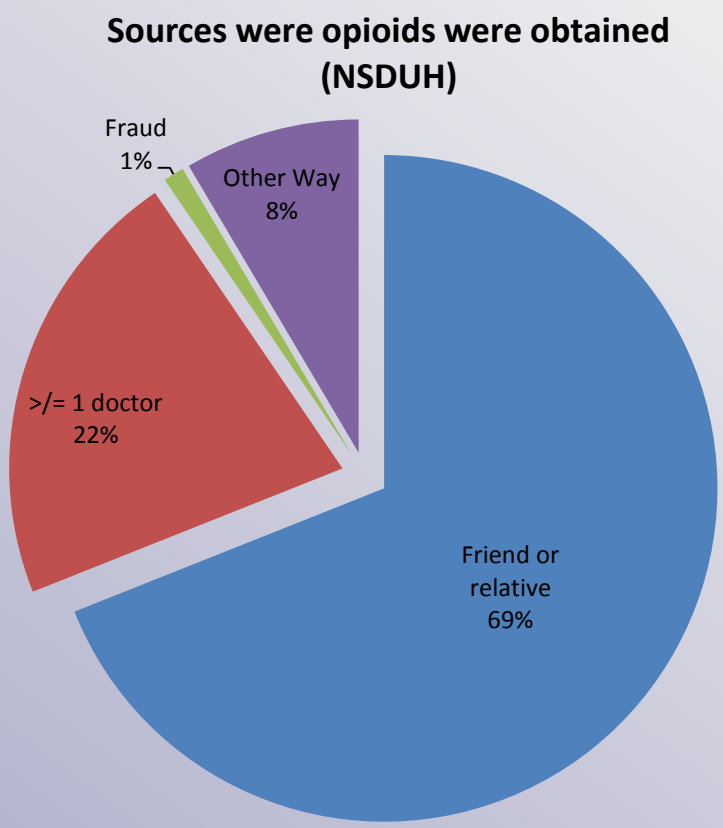
[R. Gil Kerlikowske, Director of the Office of National Drug Control Policy; cited in Trust for America's Health, 2013]

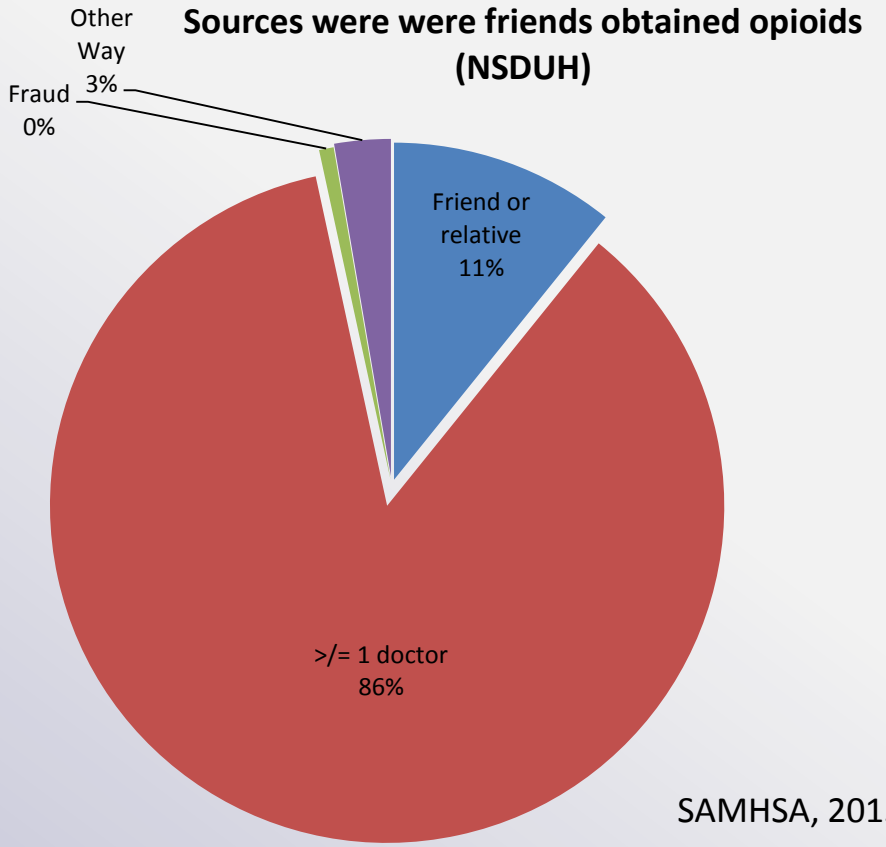
Opioid Use in the U.S.

- Prescription (Rx) drugs are widely used in the U.S.
- Dramatic increase in dispensation of opioid analgesics (Governale, 2010)
  - From 174.1 million in 2002 to 256.9 million in 2009
  - Number of unique users also rose from 2.7 million to 3.8 million
- Parallel to the rise in dispensation, there has been an increase in illicit use, ED visits, and fatal overdoses (Trust for America's Health, 2013)

Sources of Opioids

- Most nonmedical users receive opioids from family/friends who have prescriptions, or they obtain prescriptions on their own





SAMHSA, 2013

Healthcare System

- Access to opioids requires direct or indirect contact with the healthcare system
- Availability and abuse of prescription opioids in communities will vary based on access to and the size and structure of local healthcare systems

Purpose of the Study

- Examine role of local healthcare delivery system characteristics on the availability and abuse of prescription opioids, adjusting for local community characteristics

Methods

- Secondary data analysis
- Unit of analysis: County
- Opioid prescriptions dispensed / per capita rate (INSPECT)
- Treatment rate (per 1,000) for opioid pain reliever abuse (TEDS)

Methods

- Socio-economic context
  - Percentage of non-Hispanic whites, women, ages 15-24, ages 45+, at least Bachelor's degree, urban, <65 years with health insurance (ACS)
  - Percentage enrolled in Medicaid (CMS)
  - Rate of alcohol abuse as proxy for overall substance abuse burden (TEDS)

Methods

- Healthcare system
  - Access to ED (IHD)
  - Number of pharmacists (STATS Indiana)
  - Availability of physicians for various specialties, nurses, and dentists (ISHWD)
- Adjust for geographic clustering and spatial autocorrelation

Population Characteristics

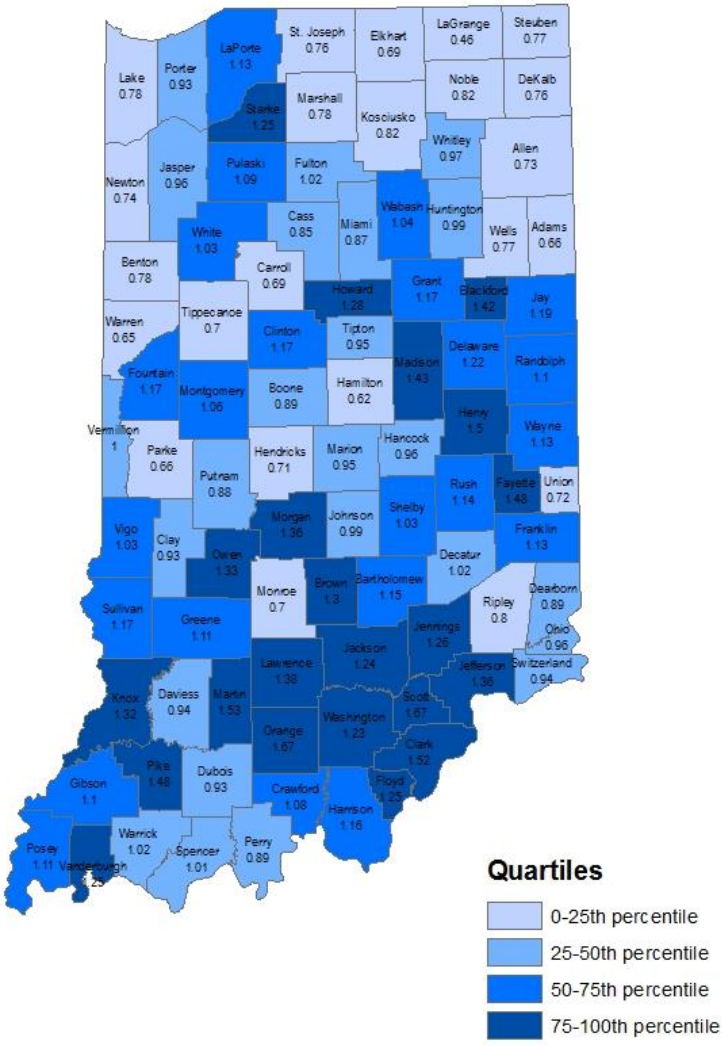
- Indiana is a medium-sized, largely rural state in the Midwest (92 counties)
- Mainly non-Hispanic white, middle- or working-class population
- Majority have access to health insurance (69%) and many low-income people are served by Medicaid (20%)
- Access to healthcare not evenly distributed across the state, but resources are concentrated in the more urban counties

	State Rate	County Level Range
Sociodemographics		
Percent Women	51.0	46.0 – 53.0
Percent Non-Hispanic	81.0	56.0 – 98.0
Percent Population 15 to 24	16.0	11.0 – 32.0
Percent Population 45 and Older	39.0	29.0 – 52.0
Percent Unemployed	10.0	4.4 – 14.3
Percent College Graduates	15.0	6.0 – 38.0
Percent Urban Residents	72.0	0.0 – 99.0
Alcohol Treatment Admission Rate	2.26	0.53 – 6.91
Health Insurance Coverage		
Percent Individuals under 65 with Private Health Insurance	69.0	58.0 – 80.0
Percent Individuals Enrolled in Medicaid	20.0	8.0 – 31.0
Healthcare Delivery System		
Hospitals with an Emergency Department (ED) Per Capita	0.000001	0.000000 – 0.000117
Actively Practicing MD's and DO's Per Capita	0.001913	0.000044 - 0.009848
Percent of Actively MD/DO's Practicing in:		
Primary Care	36.8	0.00 – 100.00
Otolaryngology	1.23	0.00 – 9.27
Anesthesiology	5.66	0.00 – 15.00
Emergency Medicine	6.20	0.00 – 33.3
Oncology	4.01	0.00 – 6.38
Surgery	9.20	0.00 – 25.00
Dentists Per Capita	0.003420	0.00 – 0.000688
Nurse Practitioners Per Capita	0.000337	0.00 - 0.000674
Physician Assistants Per Capita	0.000071	0.00 – 0.000198
Pharmacists Per Capita	0.001048	0.000165 - 0.003440
Mental Health Providers Per Capita	0.000097	0.00 - 0.001841

Dispensation of Opioid Analgesics

- In 2011, a total of 12.7 million controlled substances were dispensed in Indiana
- 6.2 million for opioid analgesics (nearly 70% for hydrocodone)
  - 0.96 per capita rate (ranging from 0.46 to 1.67)
- Model explained 74% of the variance in the per capita rate of opioid prescriptions filled in Indiana counties ($F=7.846$; $P<.001$)

Opioids Dispensed, Per Capita (2011 INSPECT)



Number of opioid prescriptions dispensed divided by county population.

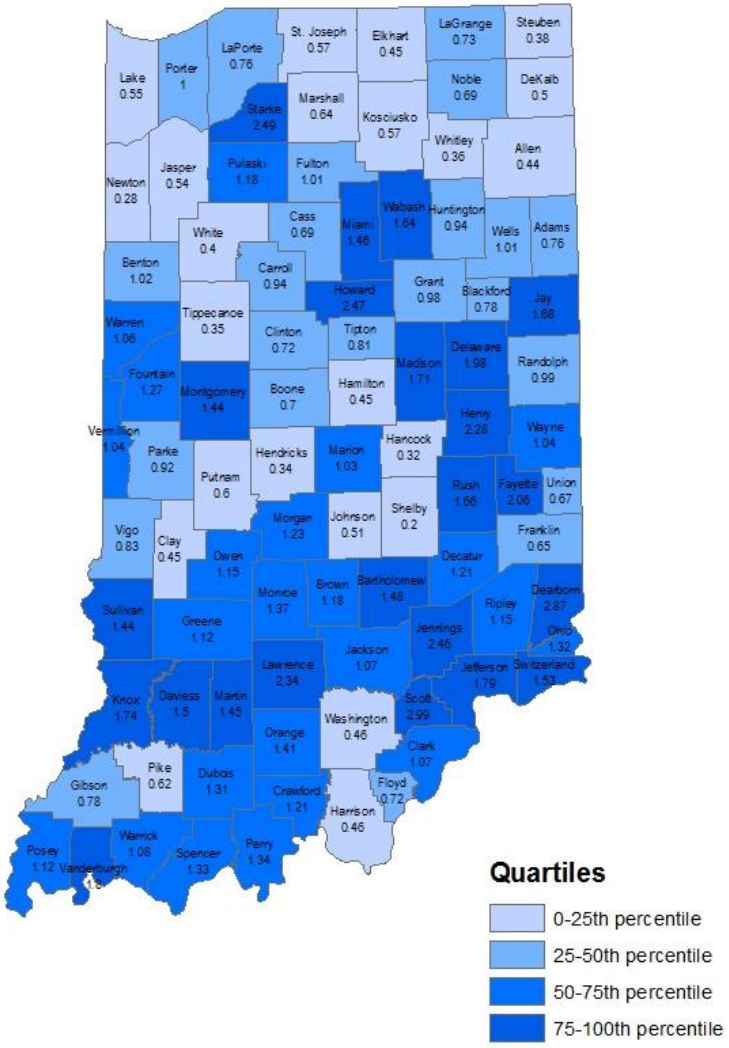
Indiana Professional Licensing Agency (IPLA). INSPECT 2011 dataset.

Predictor	b	SE	p
Sociodemographics			
Percent Women	-0.036	0.018	.059
Percent Non-Hispanic Whites	0.008	0.005	.092
Percent Population 15 to 24	0.018	0.011	.088
Percent Population 45 and Older	0.029	0.009	.003
Percent Unemployed	0.021	0.014	.139
Percent College Graduates	-0.015	0.008	.051
Percent Urban Residents	0.000	0.001	.744
Alcohol Treatment Admission Rate	0.012	0.016	.455
Health Insurance Coverage			
Percent Individuals under 65 with Private Health Insurance	0.018	0.008	.027
Percent Individuals Enrolled in Medicaid	0.025	0.008	.001
Healthcare Delivery System			
Hospitals with an ED Per Capita	-1580.202	1033.058	.131
Actively Practicing MD's and DO's Per Capita	12.366	16.626	.460
Percent of Actively MD/DO's Practicing in:			
Primary Care	0.000	0.001	.938
Otolaryngology	-0.010	0.014	.448
Anesthesiology	0.003	0.006	.641
Emergency Medicine	0.001	0.003	.789
Oncology	0.008	0.023	.740
Surgery	0.002	0.004	.649
Dentists Per Capita	598.439	223.316	.009
Pharmacists Per Capita	138.014	64.156	.035
Nurse practitioners Per Capita	-172.453	195.001	.380
Physician Assistants Per Capita	-300.003	554.928	.591
Mental Health Providers Per Capita	77.220	101.703	.450
Average Per Capita Opioid Prescriptions for Neighboring Counties	0.595	0.131	<.001
R^2 = .738, SEE = .15290, F =7.846 (P<.001)			

Abuse of Opioid Analgesics

- Substance abuse treatment admissions rose from 25,670 in 2003 to 37,501 in 2011
- The percentage of treatment admissions with reported opioid analgesic abuse also increased from 6.7% to 16.7%
- Rate of opioid analgesic abuse was 0.97 per 1,000 population in 2011 (ranging from 0.20 to 2.99)
- Model explained 57% of the variance in the opioid abuse rate per 1,000 population ($F=3.538$, $P<.001$)

Rate of Opioid Abuse, Per 1,000 (2011 TEDS)



Number of treatment episodes with reported nonmedical opioid use divided by county population and multiplied by 1,000.

Indiana Division of Mental Health and Addiction (DMHA). Treatment Episode Data Set (TEDS) 2011.

Predictor	b	SE	p
Sociodemographics			
Percent Women	-0.038	0.057	.511
Percent Non-Hispanic Whites	0.026	0.014	.060
Percent Population 15 to 24	-0.009	0.033	.781
Percent Population 45 and Older	-0.019	0.030	.531
Percent Unemployed	0.108	0.042	.012
Percent College Graduates	0.002	0.023	.946
Percent Urban Residents	0.000	0.004	.925
Alcohol Treatment Admission Rate	0.166	0.047	.001
Health Insurance Coverage			
Percent Individuals under 65 with Private Health Insurance	0.017	0.025	.488
Percent Individuals Enrolled in Medicaid	-0.003	0.025	.914
Healthcare Delivery System			
Hospitals with an ED Per Capita	924.743	3171.501	.772
Actively Practicing MD's and DO's Per Capita	-34.683	50.596	.495
Percent of Actively MD/DO's Practicing in:			
Primary Care	-0.008	0.004	.072
Otolaryngology	-0.009	0.041	.819
Anesthesiology	-0.032	0.017	.063
Emergency Medicine	-0.015	0.009	.105
Oncology	-0.023	0.070	.739
Surgery	0.005	0.012	.656
Dentists Per Capita	388.804	724.354	.593
Pharmacists Per Capita	-19.313	196.884	.922
Nurse practitioners Per Capita	627.546	577.627	.281
Physician Assistants Per Capita	-688.680	1686.307	.684
Mental Health Providers Per Capita	122.910	310.217	.693
Opioid Prescriptions Dispensed Per Capita	0.796	0.341	.023
Average County-Level Rate of Opioid Abuse in Neighboring Counties	0.108	0.212	.613
R^2 = .573, SEE = .46242, F = 3.538 (P<.001)			

Limitations

- Focus is on Indiana and may not be generalizable to other states
- Ecological analysis: County-level patterns tell very little about the individual-level clinical needs or patient-provider dynamics
- Measure of opioid abuse is an underestimate since it does not include data on private treatment admissions or abuse of opioids that has not resulted in contact with the treatment system
- Analyses do not capture the influence of counties in neighboring states

Discussion and Conclusion

- Rate of opioid prescriptions in a county was significantly associated with its rate of abuse
- Access to healthcare and the structure of local healthcare delivery systems is associated with geographic variation in access to prescription opioids
- “Iatrogenic epidemic” as an unintended byproduct of the evolution of our healthcare system, medical science, and the growth of the pharmaceutical industry

Discussion and Conclusion

- Bioethical “slippery slope”
- Need to work with healthcare provider groups to help them dispense needed medication in ways that meet needs while avoiding potential diversion and/or misuse
- Access to healthcare may contribute directly to the problem by making it easier to access the healthcare system and pay for opioids but also indirectly by facilitating unintentional and intentional diversion and criminal behavior

Key Findings and Recommendations from the 2013 IPLA INSPECT Knowledge and Use Survey

Eric R. Wright, Ph.D., Principal Investigator
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Prescription Drug Monitoring Programs (PDMPs)

- As of 2013, all states have or are developing PDMPs to collect data on prescriptions dispensed in their jurisdictions.
- Indiana's PDMP was established in 2004 and is known as the ***Indiana Scheduled Prescription Electronic Collection & Tracking (INSPECT) Program***
  - Collects and retains data on every controlled substance dispensed on an outpatient basis by all licensed pharmacies in the state
  - Maintains an online database of patient prescription information that is available to health care professionals
  - Provides an important investigative tool for law enforcement

Survey Development

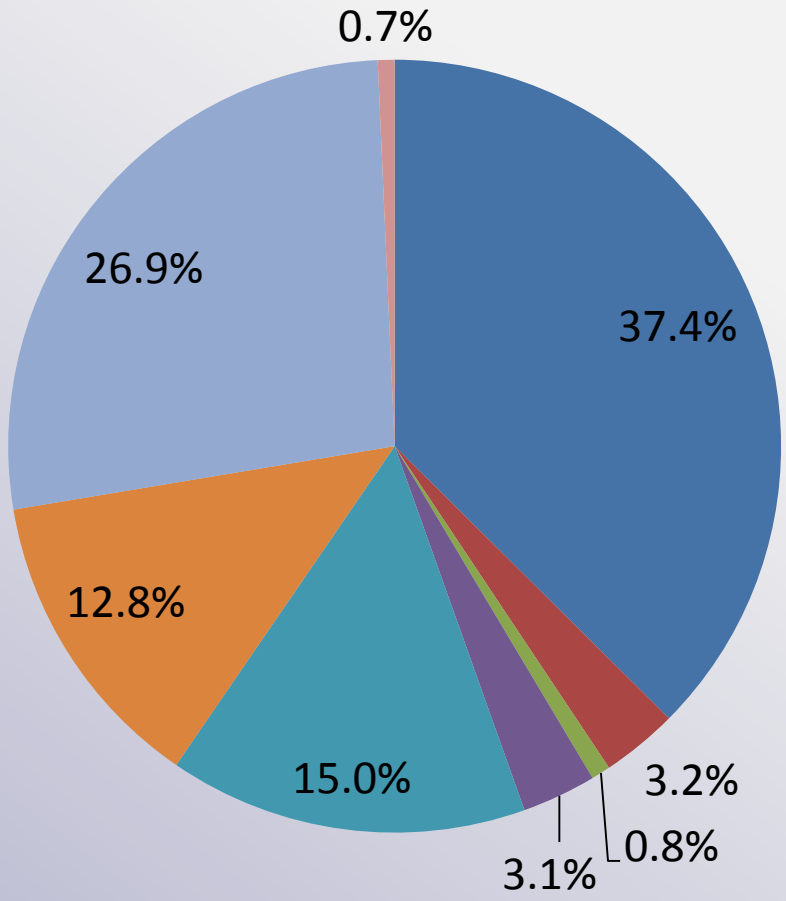
- Developed by representatives from IPLA, the State Prescription Drug Abuse Prevention Task Force Education Committee and the IUPUI Center for Health Policy
- Web-based survey designed to gather information:
  - Knowledge, use, and opinions of INSPECT
  - Prescribers' and dispensers' attitudes and beliefs about prescribing and dispensing opioids

Survey Response Rate

Licensure Type	Number Invited	Number who Completed Survey	Response Rate
Medical Doctor (MD)	17,395	2,204	12.7%
Doctor of Osteopathy (OD)	1,395	191	13.7%
Doctor of Podiatric Medicine (DPM)	347	49	14.1%
Physician Assistant (PA)	905	181	20.0%
Nurse Practitioner (NP)	3,822	886	23.2%
Dentist (DDS or DMD)	3,717	753	20.3%
Pharmacist (Pharm D or Pharm BS)	10,606	1,582	14.9%
Other/Missing	--	148	--
Total	38,333	**5,994**	**15.6%**

PARTICIPANT CHARACTERISTICS

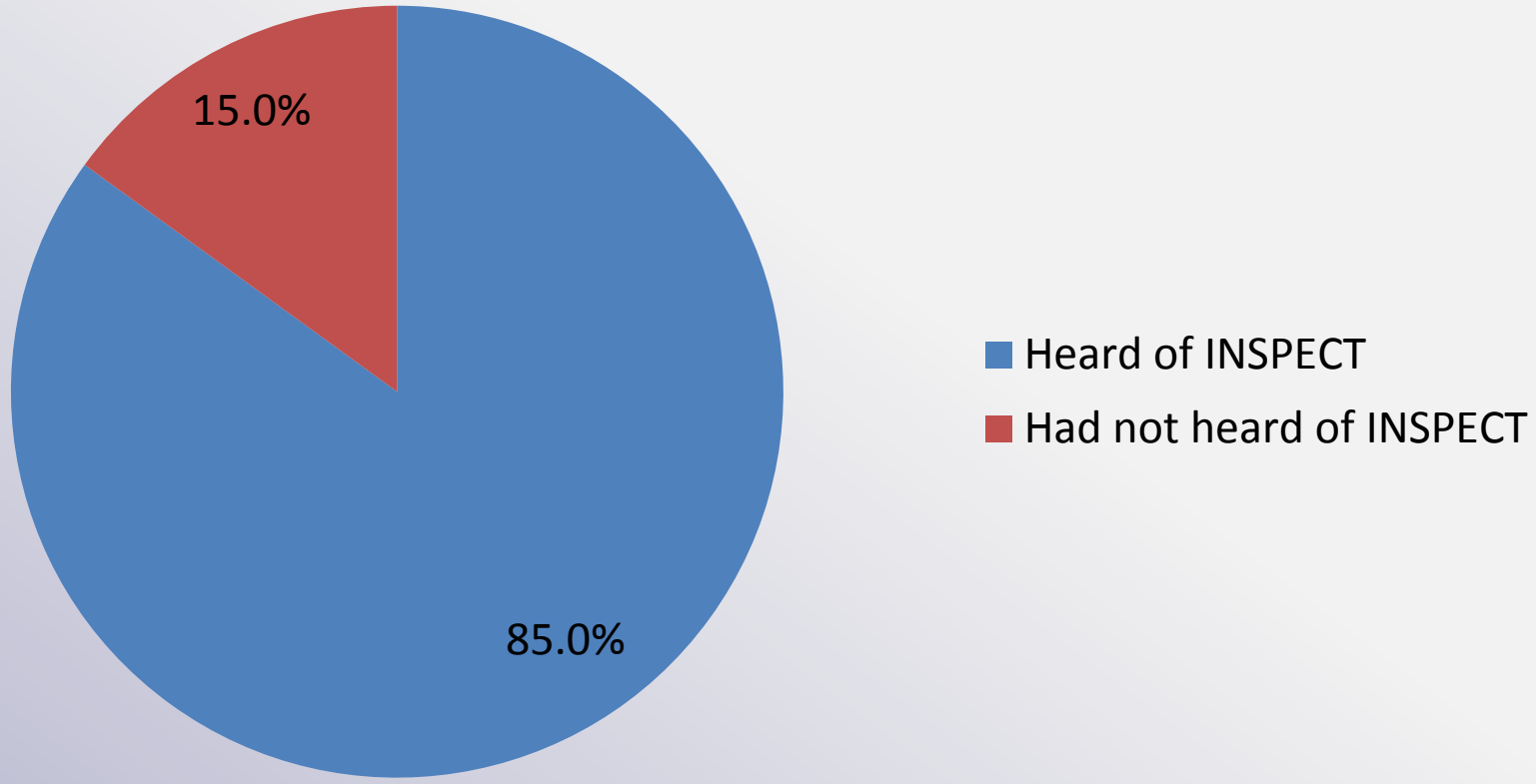
License Type



- Medical Doctor
- Doctor of Osteopathy
- Doctor of Podiatric Medicine
- Physician Assistant
- Nurse Practitioner
- Dentist
- Pharmacist
- Other

KNOWLEDGE & USE OF INSPECT

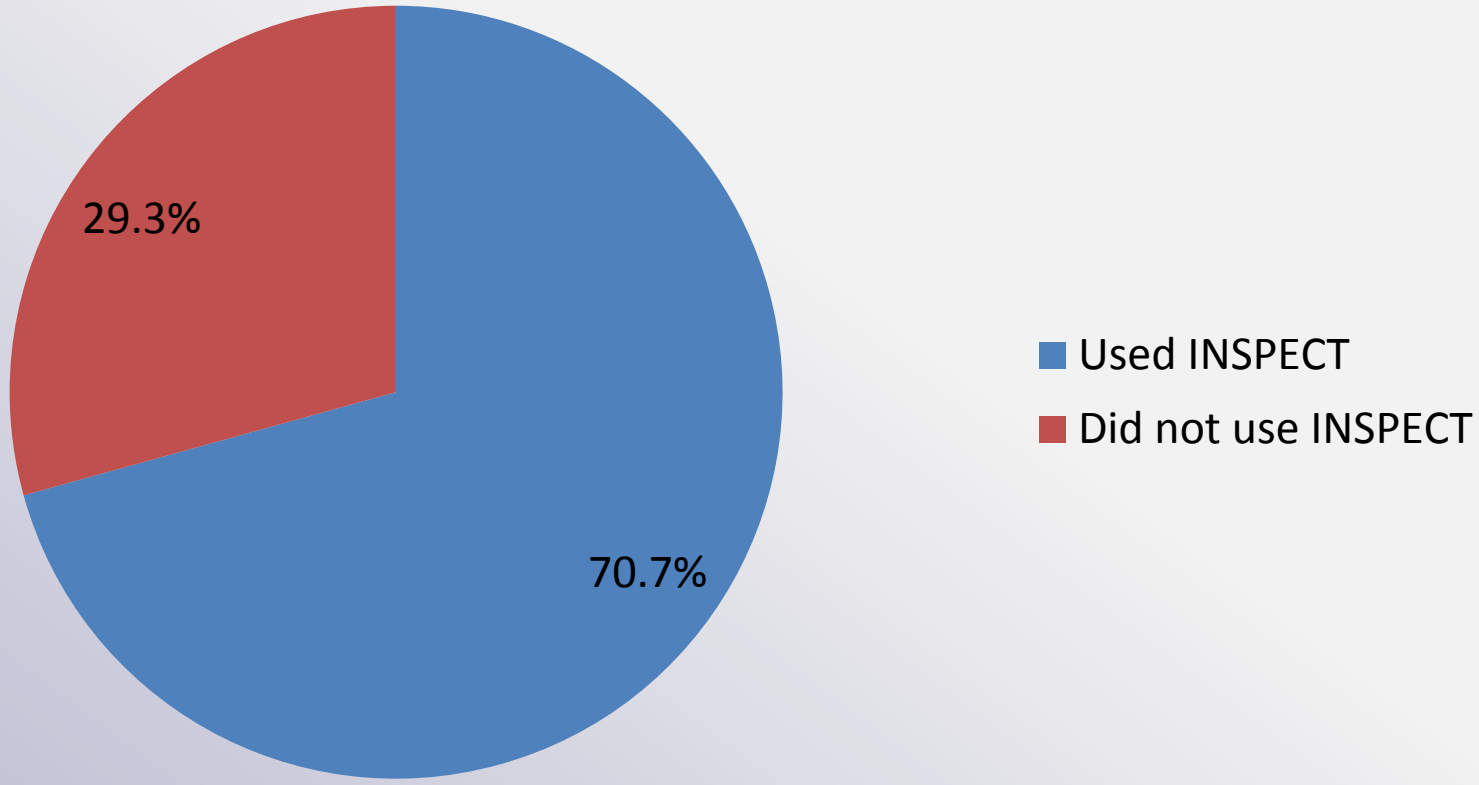
Participants Who Had Heard of INSPECT



Awareness of INSPECT by License Type

	Had heard of INSPECT		Had not heard of INSPECT	
	N	(%)	N	(%)
Medical Doctor	1,660	(76.9)	498	(23.1)
Doctor of Osteopathy	151	(80.3)	37	(19.7)
Doctor of Podiatric Medicine	35	(72.9)	13	(27.1)
Physician Assistant	167	(93.3)	12	(6.7)
Nurse Practitioner	810	(92.4)	67	(7.6)
Dentist	598	(80.7)	143	(19.3)
Pharmacist	1,469	(94.3)	88	(5.7)
Other	34	(85.0)	6	(14.9)
$\chi 2 = 284.633$, $p<.000$				

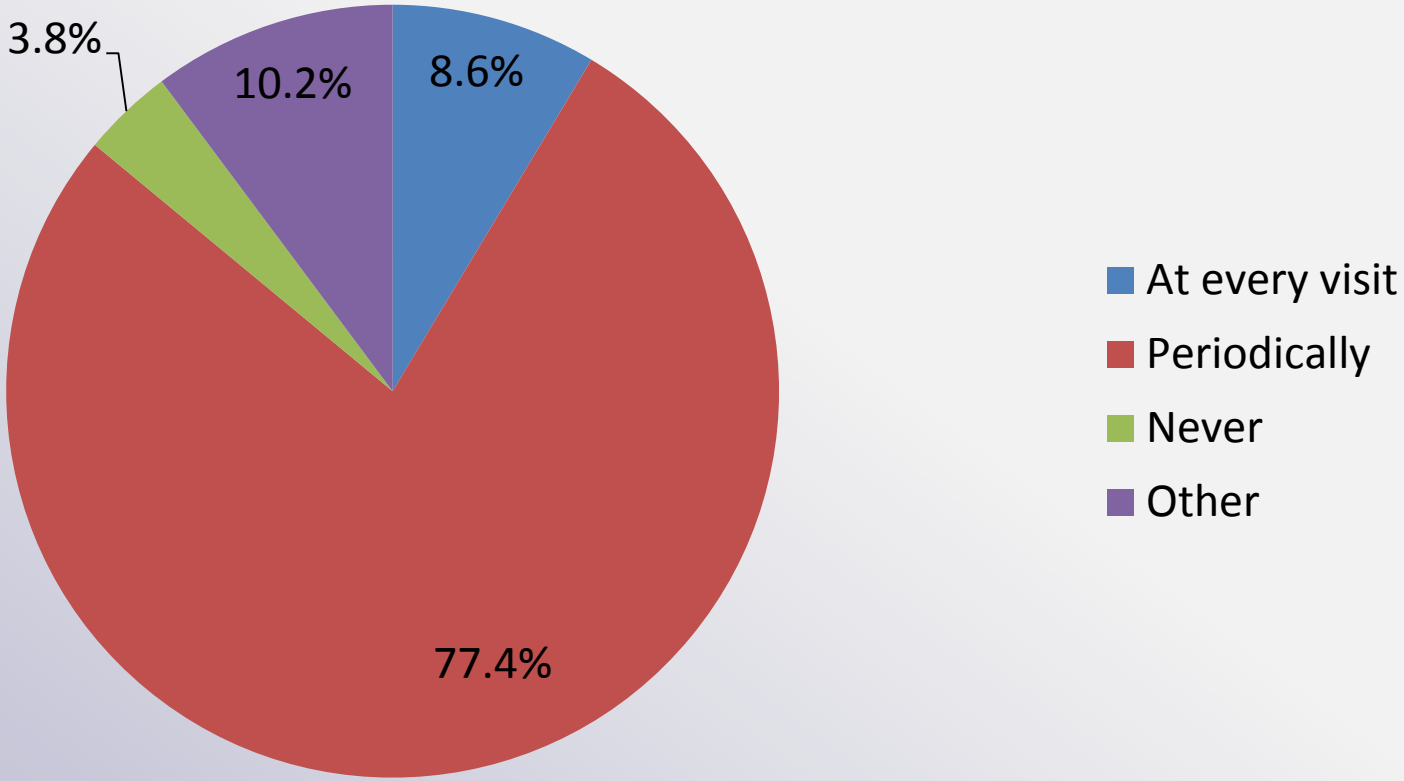
Percent of Participants Who Had Heard of and Used INSPECT



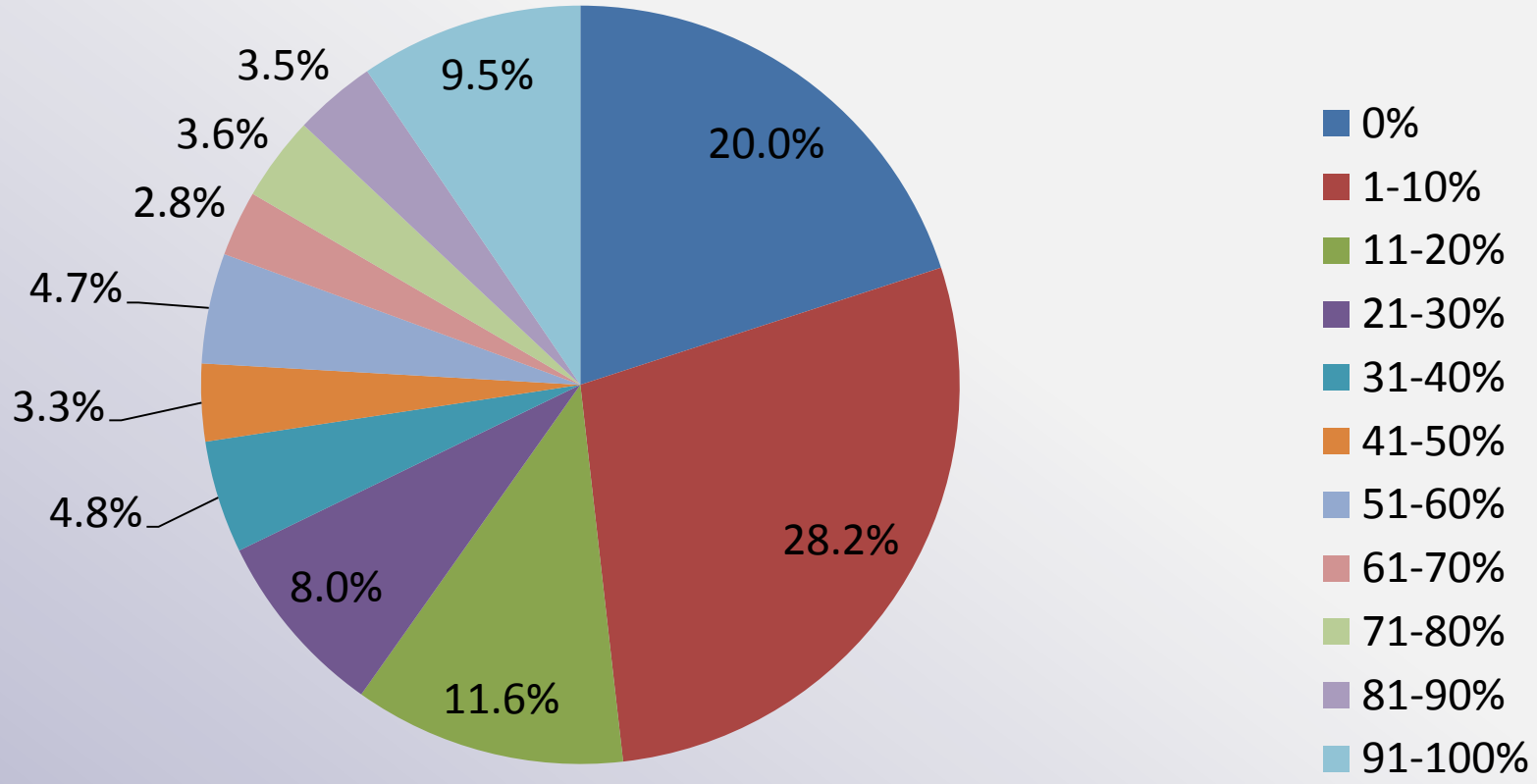
INSPECT Users by License Type

	Had used INSPECT		Had not used INSPECT	
	N	(%)	N	(%)
Medical Doctor	1,148	(71.0)	469	(29.0)
Doctor of Osteopathy	132	(89.2)	16	(10.8)
Doctor of Podiatric Medicine	17	(51.5)	16	(48.5)
Physician Assistant	134	(80.7)	32	(19.3)
Nurse Practitioner	623	(78.3)	173	(21.7)
Dentist	292	(50.4)	287	(49.6)
Pharmacist	1,043	(71.8)	410	(28.2)
Other	24	(72.7)	9	(27.3)
$\chi 2 = 176.236, p<.001$				

How often do you check INSPECT for patients on controlled substances?

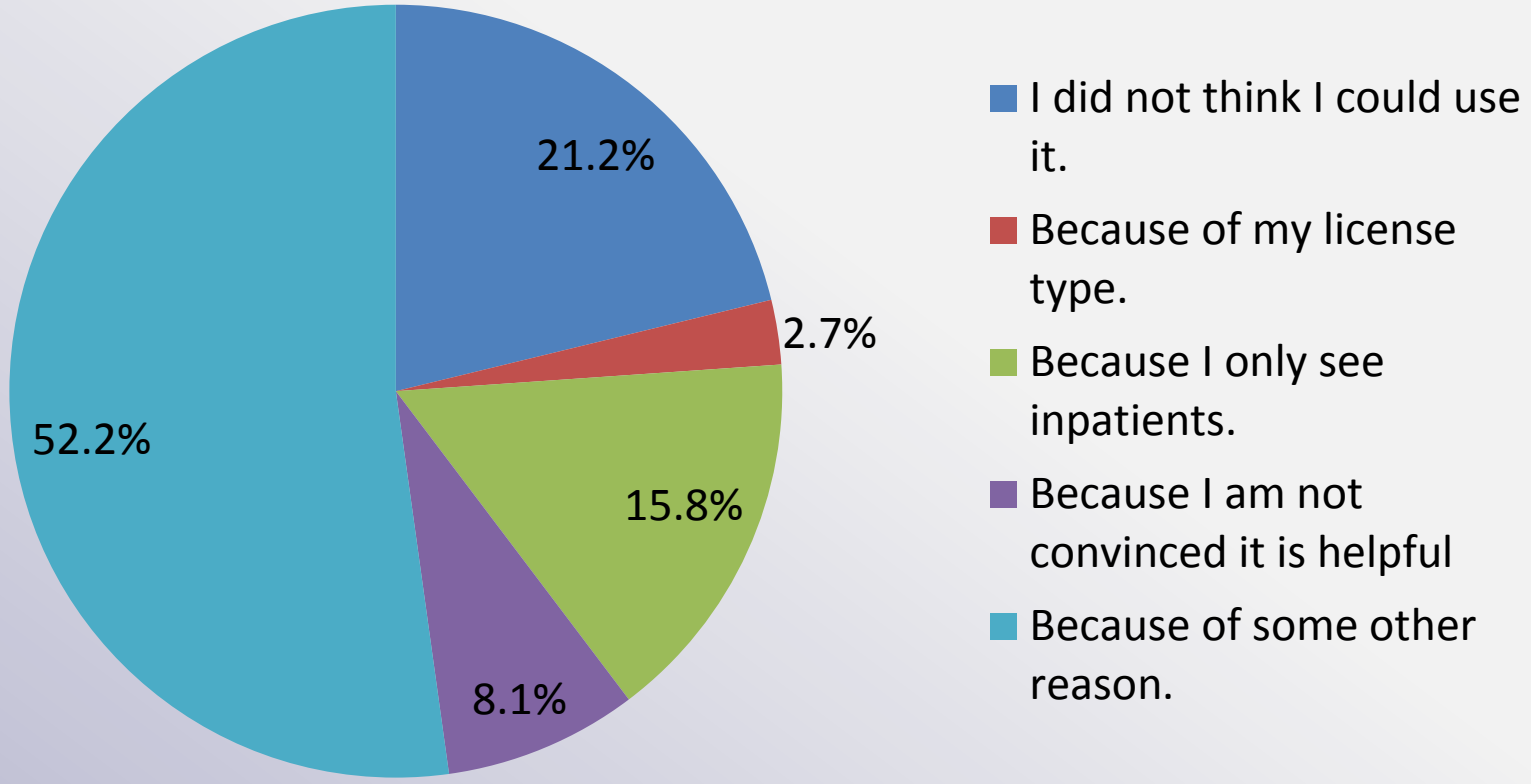


For what percent of patients to whom you have prescribed controlled substances did you review INSPECT information in the past 30 days?

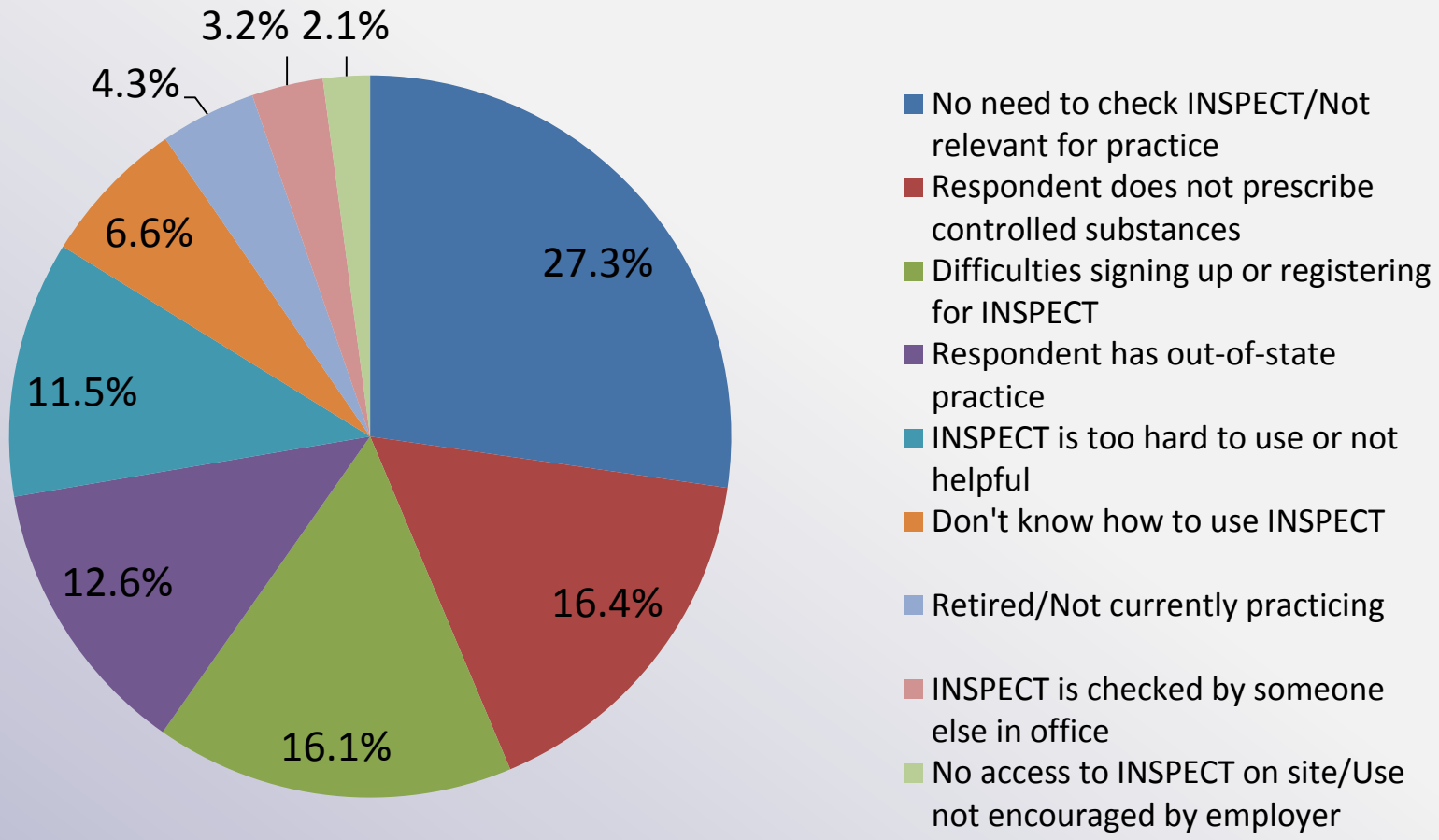


BARRIERS TO USING INSPECT

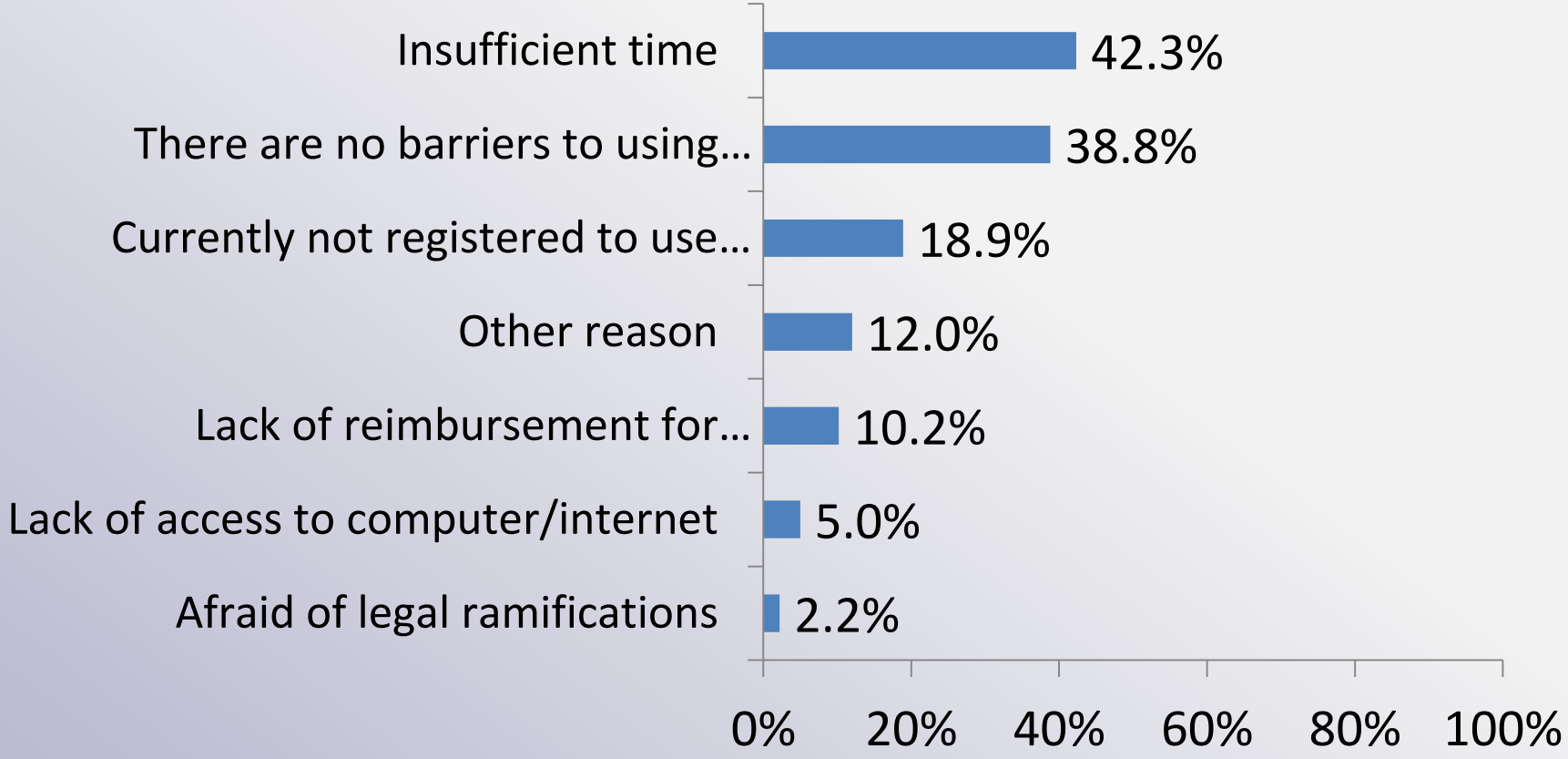
For non-users, we asked about the main reason they did not use INSPECT?



Breakdown of "Other" Reasons

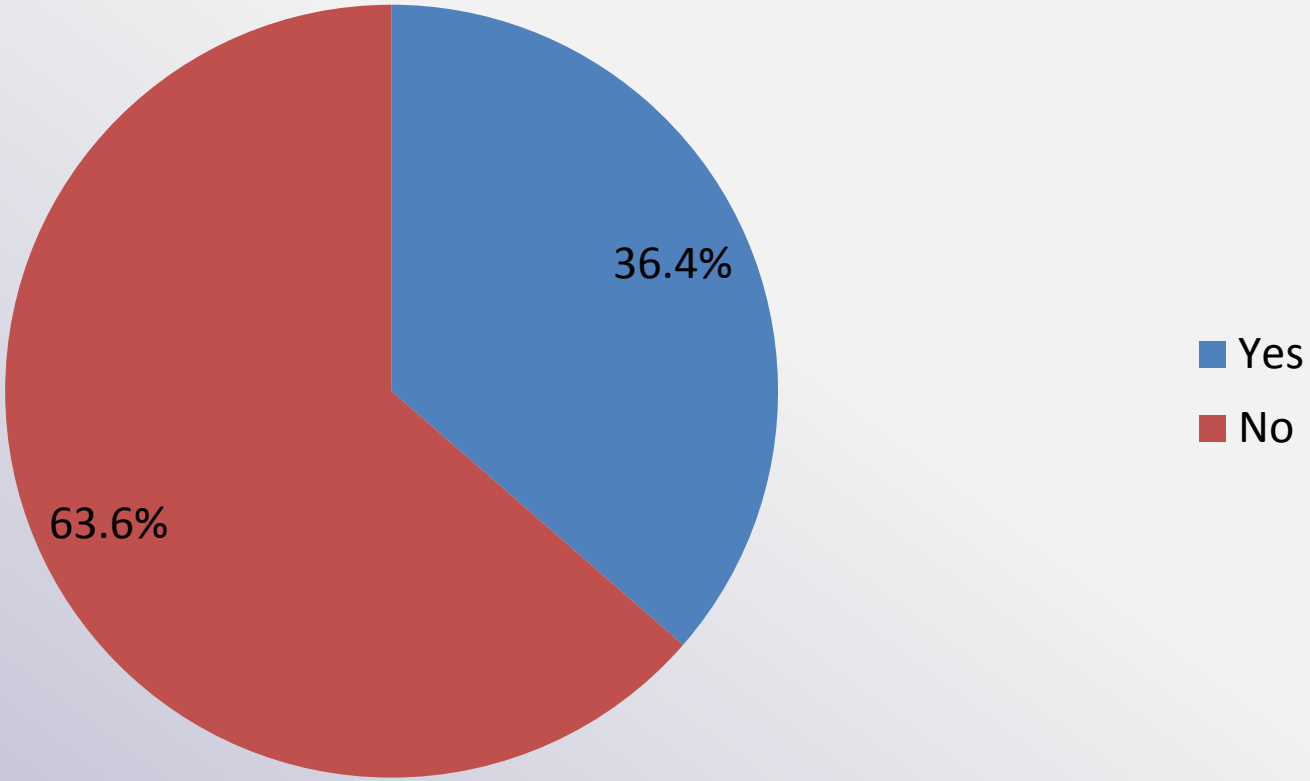


Reported Barriers to Using INSPECT Among Those Are Aware of INSPECT

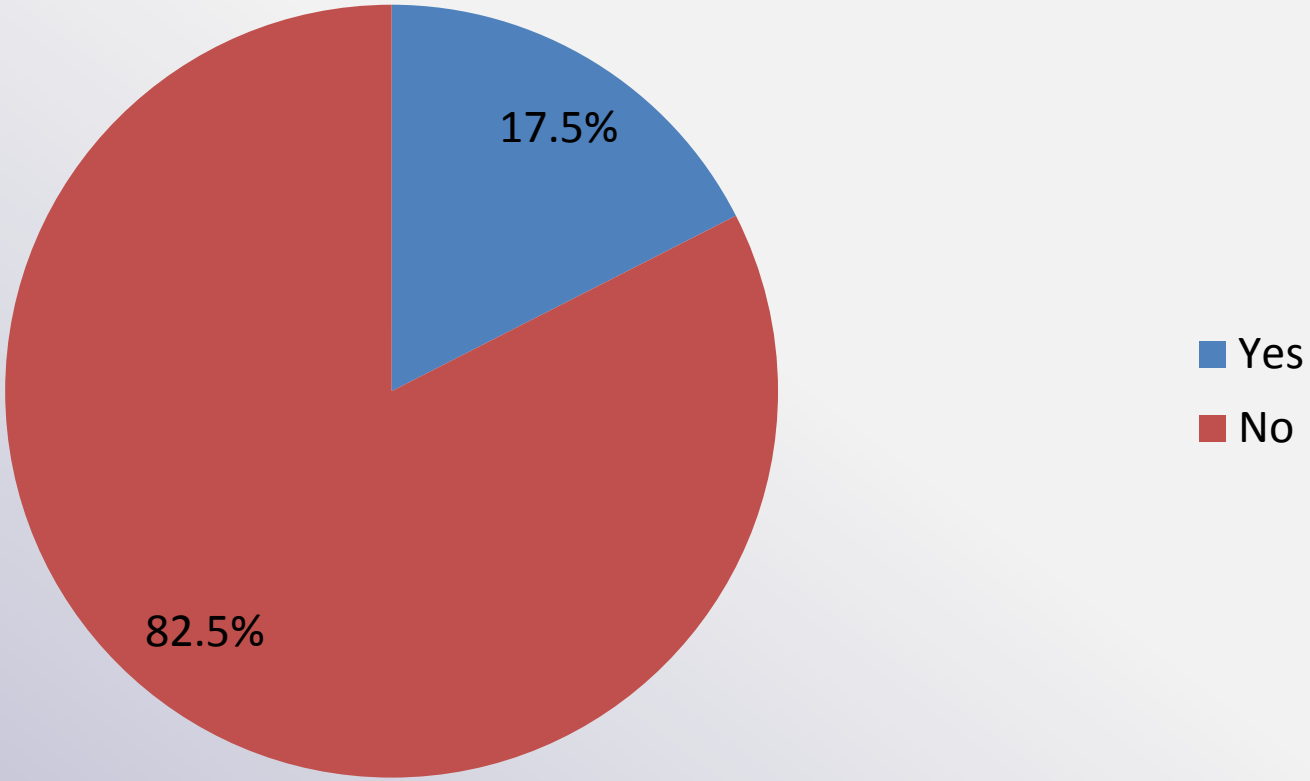


IMPACT OF INSPECT ON PRESCRIBING AND DISPENSING

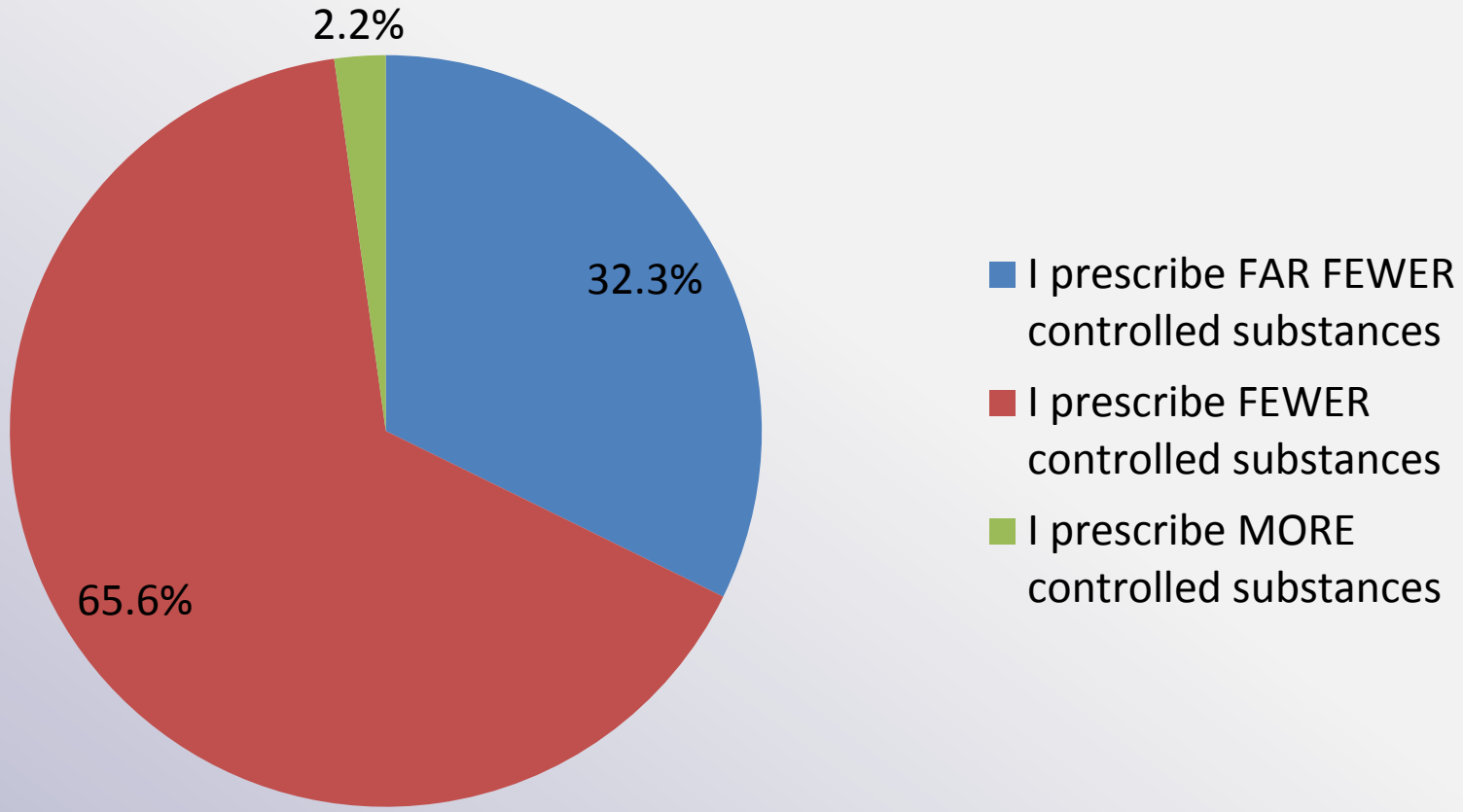
In the past 12 month period, do you believe law enforcement and regulatory agencies have used INSPECT to monitor your <u>prescribing behavior</u> more closely?



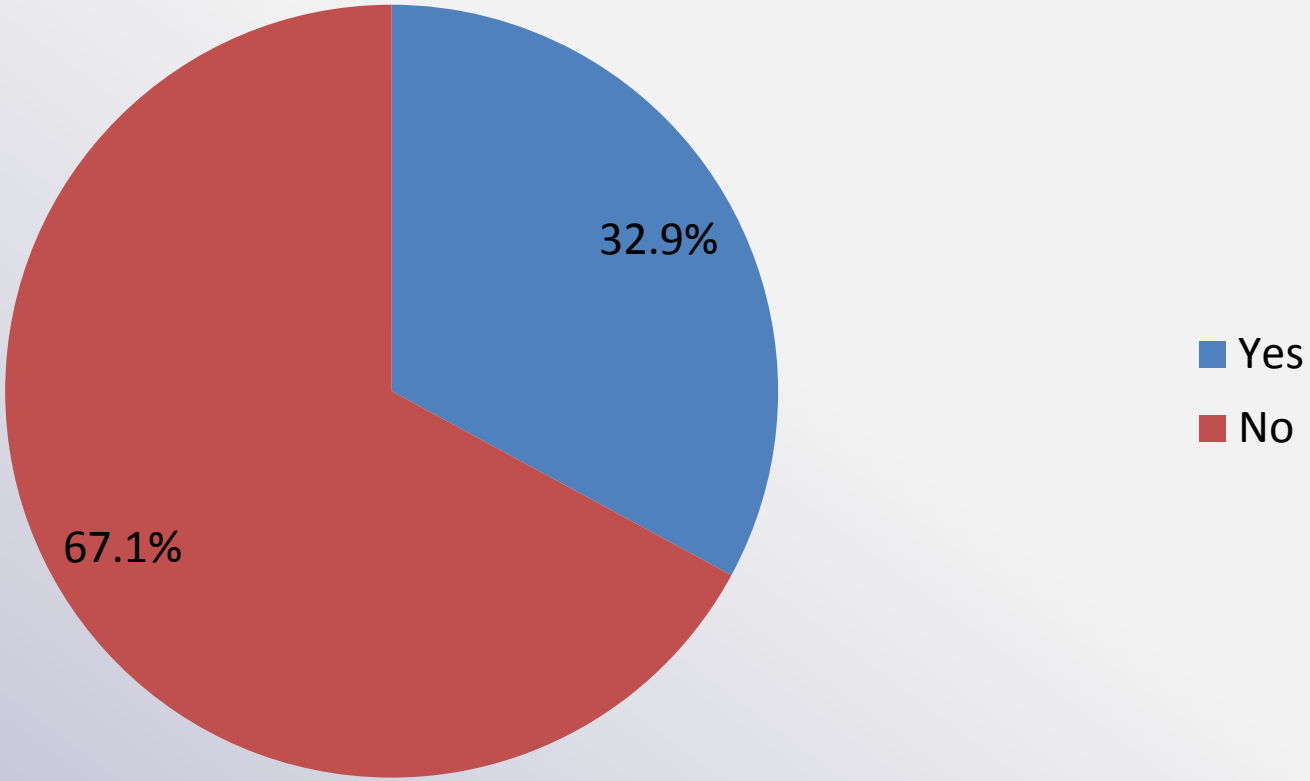
If yes, has this caused you to change your prescribing practices regarding controlled medication?



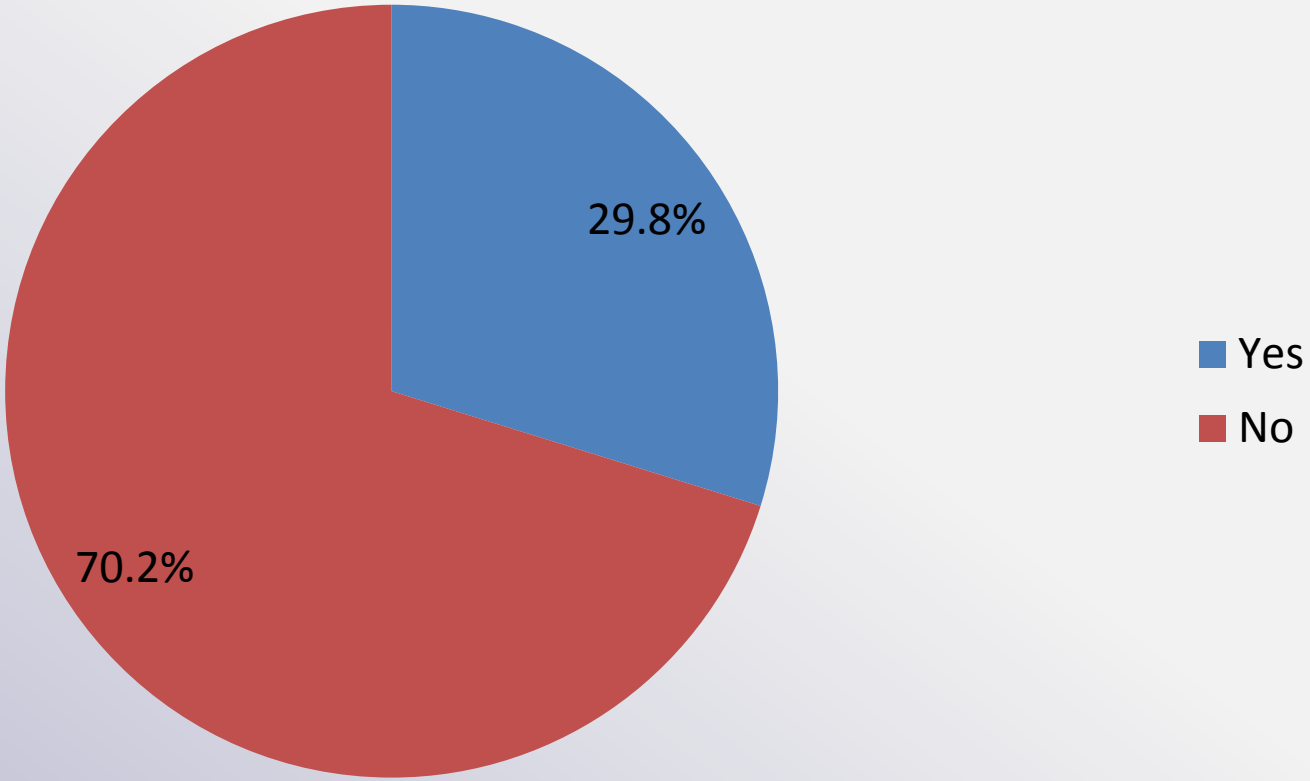
If yes, how have your prescribing practices changed due to your perception of greater oversight?



In the past 12 month period do you believe that law enforcement and regulatory agencies have used INSPECT to monitor your dispensing behavior more closely?



If yes, has this caused you to change your dispensing practices regarding controlled medications?



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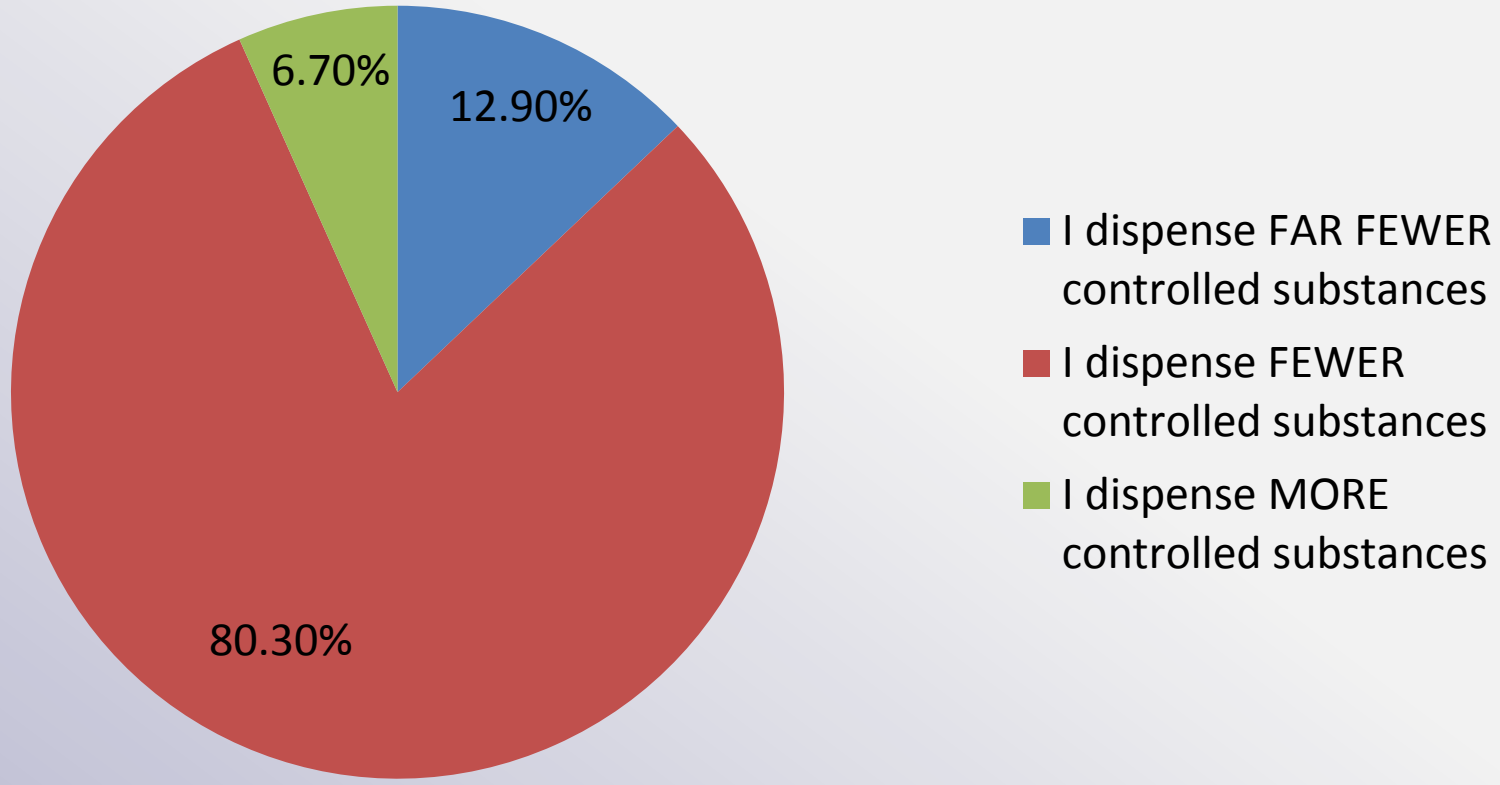
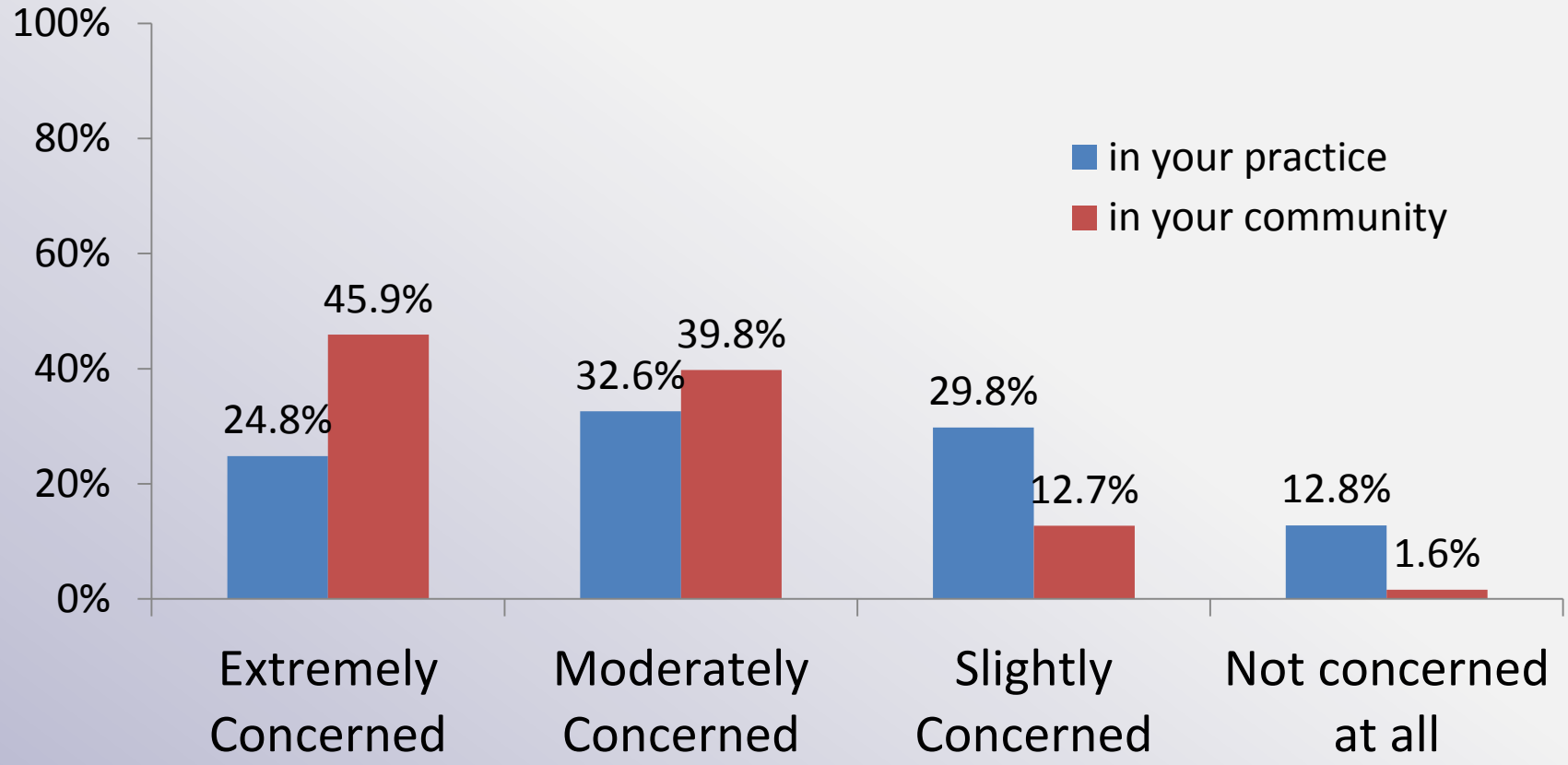
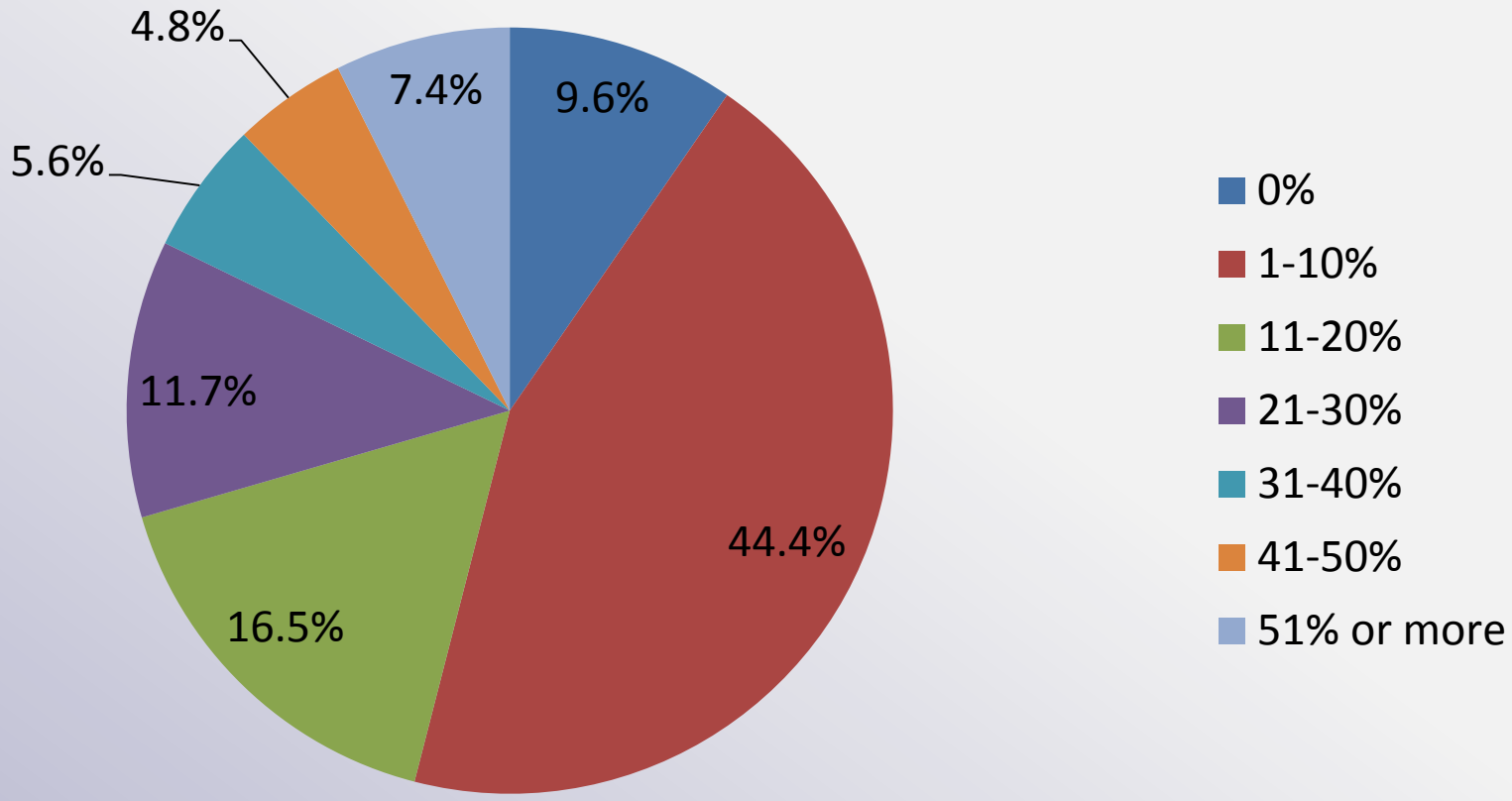


GENERAL VIEWS AND ATTITUDES

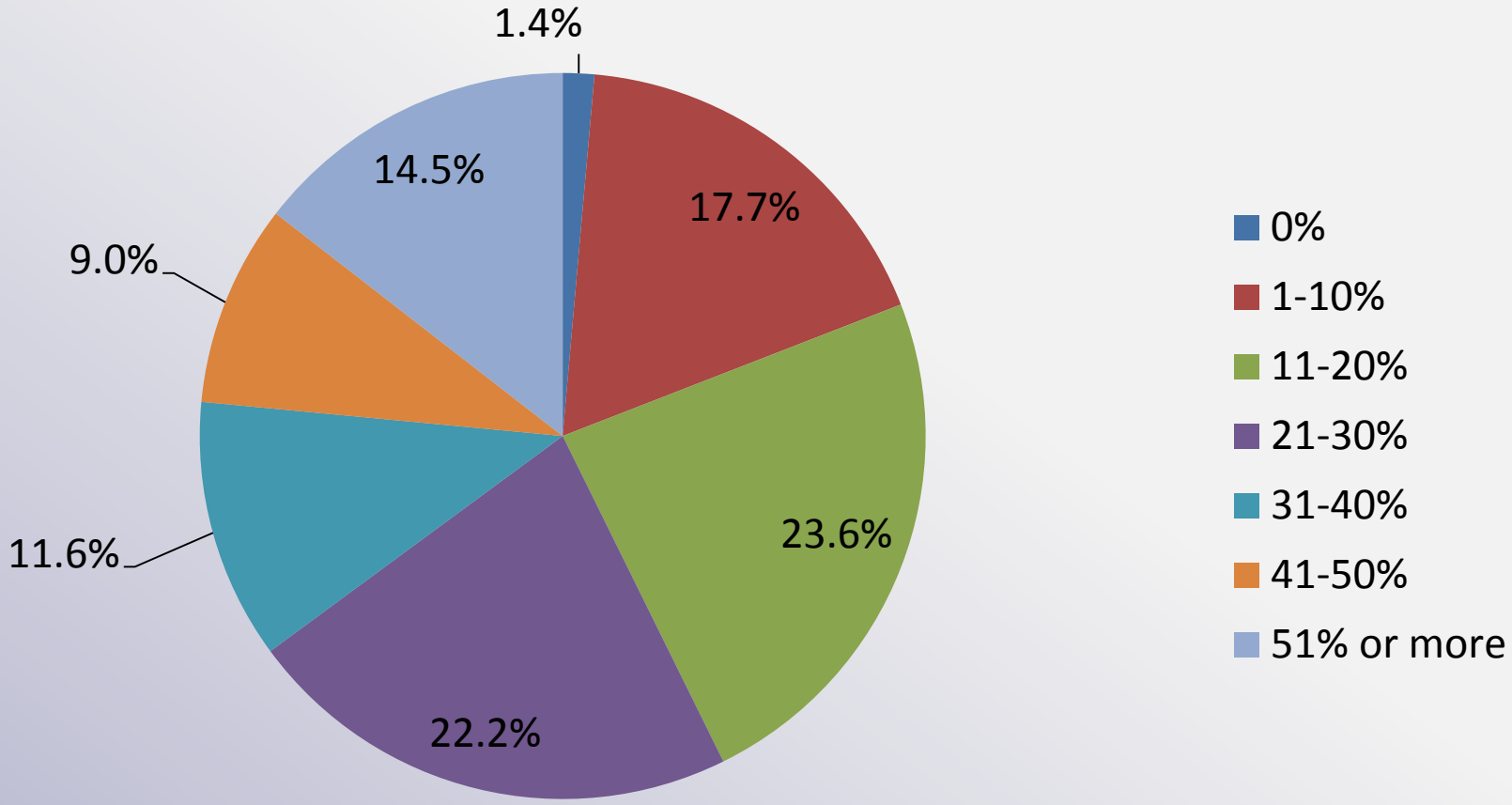
How concerned are you about prescription drug abuse among the patients in your practice and in your community?



What percent of <u>your patients</u> who are taking controlled prescription medications do you feel misuse/abuse the medications?



What percent of <u>patients in Indiana</u> taking controlled prescription medications do you feel misuse/abuse the medication?



CONCLUSIONS & RECOMMENDATIONS

Summary of Findings

- There is a high level of awareness and knowledge of the INSPECT system.
- Providers who know about INSPECT typically use it.
- Respondents generally use INSPECT to monitor their patients' prescriptions, particularly those on controlled substances.

Summary of Findings (cont.)

- Participants believe INSPECT is an effective tool for monitoring patient prescriptions and for reducing controlled substance misuse and diversion.
- The most significant barrier to using INSPECT is a lack of time.

Participant Recommendation 1

- More ready access to information regarding prescription drugs, their abuse potential, their benefits when treating acute pain, and alternatives to drug treatment for chronic pain distributed to healthcare locations.

Participant Recommendation 2

- More continuing education for prescribers and dispensers regarding:
  - best clinical pharmacological practices;
  - regulations and law enforcement policies and practices regarding drug diversion;
  - current data on trends and patterns of prescription drug misuse; and,
  - updates on current research on treating acute and chronic pain.

Participant Recommendation 3

- State-wide educational campaigns focused on:
  a) the community -- to educate people about prescription drug misuse and how to dispose of unused/expired medication, and
  b) providers -- to facilitate more discussion of a broader range of pain management options

Participant Recommendation 4

- Government should not require prescribers to review INSPECT prior to writing a prescription for a controlled substance; however, they did feel the State should strongly encourage its use while also improving access to INSPECT and its operational functioning (e.g., moving toward “real time” data reporting).

Participant Recommendation 5

- Clear recommendations for easily administered, comprehensible, and affordable screening and evaluation tools that detect misuse, distinguish between prescription and illicit drugs, and promote accurate histories.

Final Report Available Online

http://www.healthpolicy.iupui.edu/PubsPDFs/IPLA%20Inspect%20Summary%20Report.pdf

Thank You!

- The prescribers and dispensers who participated in the survey
- U.S. Department of Justice, Office of Justice Programs and the Harold Rogers Prescription Drug Monitoring Program
- Indiana Professional Licensing Agency
- Board of Pharmacy
- Attorney General's Prescription Drug Task Forces

Questions? Comments?

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